

SOUTH

DAKOTA



**SOUTH DAKOTA BAITFISH HARVEST
2001 SUMMARY**

**South Dakota
Department of
Game, Fish and Parks
Wildlife Division
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SOUTH DAKOTA BAITFISH HARVEST
2001 SUMMARY

ANNUAL REPORT

BY

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Information presented in this summary was collected from bait dealer report forms covering the period January 1, 2001 through December 31, 2001. Copies of this report and reference to the data can be made with permission from the author or Director of the Division of Wildlife, South Dakota Department of Game, Fish and Parks, 523 East Capitol, Pierre, South Dakota, 57501.

Abstract

Information gathered from the 2001 baitfish dealer report forms indicated that 146,283 gallons of fathead minnows (*Pimephales promelas*) were harvested from South Dakota waters. The 2001 fathead minnow harvest was well above the average since 1985. Over 73 percent of the fathead minnows were harvested from private waters. Wholesale dealers harvested most of the baitfish and sold them to retail and export bait dealers. Export dealers purchased 70 percent of the wholesale dealers inventories in 2001. Baitfish exports most commonly went to Minnesota, Wisconsin, Tennessee and Illinois. The majority of the baitfish harvest in South Dakota occurred in the eastern part of the state. The harvest rate from public waters ranged from less than one pound per acre to 220 pounds per acre. A conservative value estimate of the fathead minnow harvest in South Dakota for 2001 was 3.8 million dollars.

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INTRODUCTION

The baitfish harvest in South Dakota is mainly comprised of fathead minnows *Pimephales promelas* and to a lesser extent white sucker *Catostomus commersoni*, and golden shiner *Notemigonus crysoleucas*, which are commonly referred to as chubs in the South Dakota baitfish industry. Minnow will designate fathead minnow and white suckers and golden shiners will be referred to as chubs for the remainder of this report.

Minnow harvest mainly occurred in eastern South Dakota. Minnows are typically harvested from shallow marginal lakes and wetlands. These water bodies are generally productive, but are often subject to rapid habitat changes because of the dynamic nature of the region's environmental conditions.

Most chubs are taken from private waters or are imported. Many private waters are managed specifically for chub production. Bait dealers collect chub spawn, hatch the eggs and stock resulting fry into private waters for later harvest.

The three major types of bait dealer licenses issued in South Dakota are resident wholesale bait dealer, resident retail bait dealer and export bait dealer. Nonresident wholesale and retail bait dealer licenses are available if the home state of the licensee provides the same opportunity for South Dakota residents (Table 1).

Licensed dealers are required to maintain records of bait harvest and sales transactions. This information must be returned to the Department of Game Fish and Parks before a new license is issued. The failure to return these forms forfeits next year's license until the forms are completed. Licenses are issued on a calendar year basis.

OBJECTIVE

The objective of this job is to determine the magnitude of South Dakota's baitfish harvest from public and private waters, import and export from surrounding states and their subsequent distribution.

METHODS

Data were compiled from returned 2001 retail, wholesale and export dealer reports. Records for individual dealers were obtained from South Dakota Game, Fish and Parks retail, resident wholesale, and export minnow dealer report forms. Common units of measure (gallons) of bait were used in returned report forms and this report. This report summarizes the data reported from January 1, 2001 through December 31, 2001.

RESULTS and DISCUSSION

Licensed retail and wholesale minnow dealers reported obtaining 164,527 gallons of fathead minnows in 2001. The reported volume of chubs obtained in 2001 was 4,168 gallons. Minnows and chubs were obtained from public waters, private waters or imported from other states. South Dakota public waters yielded 39,362 gallons of minnows and 155 gallons of chubs. Private waters yielded 106,921 gallons of minnows and 1,399 gallons of chubs. The remaining 18,244 gallons of minnows and 2,614 gallons of chubs were imported (Table 3). Reporting retail and wholesale dealers indicated losses of 3.5 percent of the minnows and 20.6 percent of the chubs (Table 4). Baitfish sold to retail dealers by wholesale dealers were not included in the total gallons sold in South Dakota, as this would compound the amounts.

Table 1. License types, privileges granted and associated fees for South Dakota bait dealer licenses.

<u>License type</u>	<u>Privileges granted\restrictions</u>	<u>Fee</u>
Resident retail	May raise, trap, possess, buy and sell bait at retail. May not sell to wholesale, export or other retail dealer.	\$20.00
Resident wholesale	May raise, trap, buy, possess and sell bait to retail, wholesale or export dealers.	\$200.00
Export	May buy, possess and transport bait to other states for resale.	\$300.00
Nonresident wholesale	May transport bait into South Dakota and sell to retail, wholesale or export dealers.	\$400.00
Nonresident retail	May come from another state to buy, sell possess and transport bait within South Dakota. May not sell to wholesale, export or other retail dealers.	\$40.00

The 2001 total minnow harvest from South Dakota waters was above the seventeen year average. The minnow harvest from public waters was below the seventeen year average. However, the volume of minnows harvested from private waters was well above the average, for the sixth consecutive year, due to the number of waters containing a large supply of minnows (Table 5).

Table 2. Number of vendors by license type for South Dakota bait dealers and reporting rate for 2001.

License Type	Total number	Number reported	Reported
Resident Retail	175	159	91
Resident Wholesale	22	20	91
Export	20	17	85
Nonresident Wholesale	4	4	100
Nonresident Retail	1	0	0

Table 3. Volume (gal) of minnows and chubs obtained by South Dakota wholesale and retail bait dealers during 2001.

Species	Where obtained		Total	Imported	Total obtained
	Public waters	Private waters			
Minnows (fathead)	39,362	106,921	146,283	18,244	164,527
Chubs (white sucker\golden shiner)	155	1,399	1,554	2,614	4,168

Table 4. Volume (gal) of minnows and chubs sold and percent loss by South Dakota wholesale and retail bait dealers, 2001.

Species	Where sold		Total sold	Difference lost	Percentage lost
	South Dakota	Exported			
Minnows (fathead)	31,578	127,186	158,764	5,763	3.5
Chubs (white sucker\golden shiner)	2,194	1,117	3,311	857	20.6

Table 5. Gallons of fathead minnows harvested from public and private waters in South Dakota, and the number of wholesale and retail dealers during the years, 1985 through 2001.

Year	Public Waters	Private Waters	Total	Total Number Dealers Wholesale	Total Number Dealers Retail
1985	38,476	21,171	59,647		
1986	62,678	13,047	75,725	13	162
1987	62,306	28,133	90,439	14	178
1988	64,154	60,334	124,488	13	191
1989	78,653	43,614	122,267	17	195
1990	45,363	53,601	98,964	22	166
1991	62,604	34,163	96,767	21	155
1992	64,820	32,009	96,829	20	158
1993	50,814	21,392	72,206	18	152
1994	60,865	35,472	96,337	20	150
1995	72,247	53,004	125,251	17	140
1996	63,003	91,442	154,445	20	147
1997	66,024	75,441	141,465	20	149
1998	63,396	100,995	164,391	19	171
1999	37,442	134,563	172,005	24	197
2000	39,615	147,653	187,268	25	205
2001	39,362	106,921	146,283	22	175
17 Year Average					
	57,166	61,939	119,105	19	168

RETAIL DEALERS

Completed summaries were returned from 159 of the 175 licensed retail bait dealers (91% return rate). Summaries were either incomplete or not returned by 16 dealers and could not be used in this report (Table 2). Retailers reported obtaining 20,252 gallons of minnows and selling 19,544 gallons. They also obtained 2,580 gallons of chubs and sold 2,486 gallons (Tables 6,7). South Dakota retail bait dealers purchase the majority of their baitfish from wholesale dealers (96% for minnows and 79% for chubs). The loss of 3.5 percent of the total inventory of minnows was within the range of two to five percent which is typically reported (Broughton,1994). The loss of 3.6 percent of the chub inventory was lower than what's typically been reported of 4.4 (years 1994-1998). Some of the minnow and chub loss can be attributed to a few licensed dealers that do not sell any bait; they use the bait for themselves or clients if they are a fishing guide. Licensed dealers can obtain bait from wholesalers and possess more than 12 dozen.

Table 6. Volume (gal) of minnows and chubs obtained by South Dakota retail bait dealers during 2001.

Species	Where obtained				Total
	Public waters	Private waters	Wholesale dealer Resident	Wholesale dealer Non-Resident	
Minnows (fathead)	86	719	16,863	2,584	20,252
Chubs (white sucker\golden shiner)	11	539	1,772	258	2,580

Table 7. Volume (gal) of minnows and chubs sold and percent loss by South Dakota retail bait dealers during 2001.

Species	Total sold	Difference lost	Percentage lost
Minnows (fathead)	19,544	708	3.5
Chubs (white sucker\golden shiner)	2,486	94	3.6

WHOLESALE DEALERS

Wholesale dealers are responsible for the bulk of the minnow harvest in South Dakota. In 2001, 20 of the 22 wholesale dealers completed report forms, a 91 return rate (Table 2).

Reporting dealers harvested 145,478 gallons of minnows and 1,004 gallons of chubs from South Dakota waters and imported 15,660 gallons of minnows and 2,356 gallons of chubs (Table 8). They reported selling 157,959 gallons of minnows and 2,761 gallons of chubs (Table 9). The loss of 2.0 percent of the minnow inventory was near the 1.9 percent reported in 2000.

Reports of inter-dealer transfers have been requested since 1992. Previously, when one wholesale dealer would sell to another it was recorded as minnows sold in South Dakota. However, the purchasing dealer often resold the minnows either to an exporter, retailer or another wholesaler, thus compounding the volume of minnows sold. In 2001, inter-dealer transfers among wholesalers amounted to 27,297 gallons of minnows.

Table 8. Volume (gal) of minnows and chubs obtained by South Dakota wholesale bait dealers during 2001.

Species	Where obtained		Total	Imported	Total obtained
	Public waters	Private waters			
Minnows (fathead)	39,276	106,202	145,478	15,660	161,138
Chubs (white sucker/golden shiner)	144	860	1,004	2,356	3,360

Table 9. Volume (gal) of minnows and chubs sold and percent loss by South Dakota wholesale bait dealers during 2001.

Species	Where sold		Total sold	Difference lost	Percentage lost
	South Dakota	Exported			
Minnows (fathead)	30,773(a)	127,186(b)	157,959	3,179	2.0
Chubs (white sucker/golden shiner)	1,644(c)	1,117	2,761	599	17.8

(a) Does not include 27,297 gallons sold among wholesale dealers as inter-dealer transfers

(b) Includes minnows sold to exporters and retail stores in neighboring states

(c) Does not include 1,304 gallons sold among wholesale dealers as inter-dealer transfers

EXPORT DEALERS

Seventeen of the 20 licensed export dealers provided reports for 2001. They obtained 113,647 gallons of minnows from wholesale dealers. This amount comprises 70.5 percent of the entire wholesale inventory (Table 10).

Table 10. South Dakota export bait dealer 2001 report of baitfish sales.

Species	Total obtained	Percent of wholesale inventory
Minnows (fathead)	113,647	70.5
Chubs (white sucker\golden shiner)	1,167	34.7

Wholesale dealers reported selling 127,186 gallons of minnows outside of South Dakota. Sales were to export dealers and where legal, to retail outlets and hatcheries in surrounding states. The majority of minnows exported in 2001 were destined for Minnesota, Wisconsin, Tennessee and Illinois (Table 11).

Table 11. States of destination and the volume (gal) of minnows exported by export dealers from South Dakota during 2001.

State	Gallons of	
	Minnows	Chubs
Minnesota	57,449	
Wisconsin	35,414	213
Tennessee	21,200	
Illinois	14,145	
Nebraska	8,679	708
Kansas	8,341	
Iowa	6,926	141
North Dakota	2,547	
Ohio	960	
Missouri	610	
Total	156,884	1,167

PUBLIC WATERS HARVEST

Harvest of minnows ranged from less than 1 pound to 220 pounds per acre from public waters. Waters producing less than five pounds per acre were not included in this report (Table 12). Harvest of minnows by weight per area of water may be inflated for the 2001 reporting period. Lakes and wetlands have expanded in area due to heavy precipitation in 1995 and 1996. Thus, the actual harvest in pounds per acre is undoubtedly lower than reported because many water body acreages are greater. Much of the expansion of lakes and wetlands and the creation of new wetlands by the heavy precipitation occurred in areas partially or entirely owned by the private sector. This was a primary factor for the dramatic increase in the private water minnow harvest since 1996 (Table 5).

Table 12. Public waters yielding greater than 5 pounds
of fathead minnows per surface acre during 2001.

Lake	County	Mgmt Class	Acres	Total Gallons	Pounds/ Acre
N Lynn	Day	WF	129	3544	219.78
Howley lake	Marshall	WF	61	1360	178.36
Badus	Lake	WM	231	1887	65.35
Mid Lynn	Day	WF	671	5180	61.76
Turtlefoat	Marshall	WM	160	867	43.35
Opdalh	Hamlin	WF	473	2320	39.24
Eggen	Roberts	WF	171	700	32.75
Plum	Kingsbury	WF	400	1490	29.80
Nutley	Day	WF	182	674	29.63
Horseshoe	Marshall	WF	68	235	27.65
Five Ponds	Hamlin	WF	1047	3587	27.41
Piyas	Marshall	WF	1300	3732	22.97
Goose	Day	WF	547	1545	22.60
Cherry	Clark	WF	300	700	18.67
Henry	Lake	WF	325	620	15.26
Overhead	Clark	WF	154	253	13.14
Goose	Codington	WF	1206	1871	12.41
Hauge GPA	Day	WF	235	340	11.57
Drywood	Roberts	WM	3000	4065	10.84
Lost	Minnehaha	WM	163	198	9.72
Christopherson GPA	Clark	WF	600	630	8.40
Lonetree	Deuel	WM	200	186	7.44
Caseys Slough	Clark	WF	700	602	6.88
Snow	Tripp	WM	76	60	6.32
Willow	Clark	WM	380	260	5.47

WF = Wildlife- no fish management
WM = Warmwater marginal fisheries

ECONOMIC VALUE

The gross value of minnow harvest during 2001 in South Dakota was in excess of 3.8 million dollars. This estimate is based on the 2001 wholesale dealer harvest of 161,138 gallons of fathead minnows and sales of minnows to export, retail and other wholesale dealers (Table 13). During the year 2000 in North Dakota, the average wholesale price was approximately \$15.64 per gallon and retail was \$1.13 per dozen. One gallon of minnows is approximately 65 dozen, thus one gallon of minnows at retail was \$73.45 in North Dakota (Berard, et al 2001). Phone and personal interviews were conducted in 2001, to collect retail and wholesale prices in South Dakota. Fifteen retail dealers (7%) were interviewed and average price per scoop (1.5 dozen per scoop) was \$1.60. Therefore, retail price for one gallon of minnows was \$70. Wholesale prices were \$13 per gallon to retail dealers and \$8.50 per gallon for export sales (Table 13). Gross estimated value for 2001 was 3.8 million dollars.

Table 13. Estimated gross value of the 2000 South Dakota fathead minnow harvest.

Sold to	Sold by	Gallons	Estimated cost per gallon	Total cost
Export	Wholesale	156,884	8.50	1,333,514
Retail (a)	Wholesale	19,447	13.00	252,811
In S.D.(b)	Wholesale	11,326	8.50	96,271
Outside				
S. D. (c)	Wholesale	43,237	13.00	562,081
Anglers (d)	Retail	18,766	70.00	1,314,320
Anglers (e)	Retail	778	70.00	54,460
Wholesale	Wholesale	27,297	8.50	232,025
				3,845,482

a) Retail intake from resident & nonresident wholesale dealers

b) Total sold by wholesale in S.D.(30,773) - sold to retail
(19,447) = 11,326

c) Total export (156,884) - sales to exporters (113,647)= 43,237

d) Wholesale product (19,447) - 3.5 % loss (681) = 18,766

e) Retailers own harvest: Retail total sold (19,544) - retail sale of wholesale product (18,766) = 778

REFERENCES

- Broughton, J. 1994. South Dakota Baitfish Harvest Summary 1993, Dingell Johnson Project F-21-R-29, Study I, Job 2, Department of Game Fish & Parks, No. 95-1.
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